

Virology

QR
360
V5

VOLUME 19 • 1963

EDITORS

George K. Hirst, EDITOR-IN-CHIEF L. M. Black Myron K. Brakke
S. E. Luria L. Siminovitch

ASSOCIATE EDITORS

G. Bertani	Robert Horne	A. F. Ross
Rupert J. Best	W. K. Joklik	Harry Rubin
John S. Colter	Basil Kassanis	W. Schäfer
Samuel Dales	Eduard Kellenberger	R. Walter Schlesinger
Frank Fenner	C. A. Knight	Albert Siegel
Clarence R. Fuerst	David R. Krieg	Robert L. Sinsheimer
Robert W. Fulton	Leon Levintow	Michael Stoker
Karl Habel	André Lwoff	Irwin Tessman
Werner Henle	Benjamin Mandel	J. P. H. van der Want
A. D. Hershey	Roy Markham	H. G. Wittmann
		C. E. Yarwood

ACADEMIC PRESS
New York and London



COPYRIGHT© 1963, BY ACADEMIC PRESS INC.

ALL RIGHTS RESERVED

NO PART OF THIS VOLUME MAY BE REPRODUCED IN ANY
FORM, BY PHOTOSTAT, MICROFILM, OR ANY OTHER MEANS,
WITHOUT WRITTEN PERMISSION FROM THE PUBLISHERS.

Made in the United States of America

Contents of Volume 19

NUMBER 1, JANUARY 1963

RUIZ-GOMEZ AND A. ISAACS. Optimal Temperature for Growth and Sensitivity to Interferon among Different Viruses.....	1
RUIZ-GOMEZ AND A. ISAACS. Interferon Production by Different Viruses.....	8
UL KIT, D. R. DUBBS, AND T. C. HSU. Biochemistry of Vaccinia-Infected Mouse Fibroblasts (Strain L-M). III. Radioautographic and Biochemical Studies of Thymidine-H ³ Uptake into DNA of L-M Cells and Rabbit Cells in Primary Culture.....	13
TIMOTHY CROCKER AND JULIE MICOU EASTWOOD. Subcellular Cultivation of a Virus: Growth of Ornithosis Virus in Nonnucleate Cytoplasm.....	23
KELLY. Localization of P2 Prophage in Two Strains of <i>Escherichia coli</i>	32
EENE T. SCHULZE AND R. WALTER SCHLESINGER. Plaque Assay of Dengue and Other Group B Arthropod-Borne Viruses under Methyl Cellulose Overlay Media.....	40
EENE T. SCHULZE AND R. WALTER SCHLESINGER. Inhibition of Infectious and Hemagglutinating Properties of Type 2 Dengue Virus by Aqueous Agar Extracts..	49
MARTIN LERNER, JAMES D. CHERRY, AND MAXWELL FINLAND. Hemagglutination with Reoviruses.....	58
ALTER HARM. Mutants of Phage T4 with Increased Sensitivity to Ultraviolet....	66
VONNE THÉRY LANNI AND D. J. MCCORQUODALE. DNA Metabolism in T5-Infected <i>Escherichia coli</i> : Biochemical Function of a Presumptive Genetic Fragment of the Phage.....	72
ARI CANTELL AND KURT PAUCKER. Studies on Viral Interference in Two Lines of HeLa Cells.....	81
ETER E. LEE. Mechanical Transmission of Wheat Striate Mosaic Virus to Its Leafhopper Vector <i>Endria inimica</i> Say.....	88
ETER K. VOGT AND HARRY RUBIN. Studies on the Assay and Multiplication of Avian Myeloblastosis Virus.....	92

DISCUSSION AND PRELIMINARY REPORTS

J. DONALD HARE AND HERBERT R. MORGAN. A Polyoma Virus Variant with New Antigenic Determinants.....	105
PAUL H. BLACK AND WALLACE P. ROWE. Transformation in Hamster Kidney Monolayers by Vacuolating Virus, SV-40.....	107
MANFRED MUSSGAY AND JOSEF WEIBEL. Electron Microscopic Demonstration of Purified Venezuelan Equine Encephalitis Virus.....	109
HERBERT A. BLOUGH. The Role of the Surface State in the Morphogenesis of Influenza Virus Filaments.....	112
JOSEPH L. MELNICK, W. CHARLES COCKBURN, GILBERT DALLDORF, SVEN GARD, JAMES H. S. GEAR, WILLIAM McD. HAMMON, MARTIN M. KAPLAN, FRED P. NAGLER, NILS OKER-BLOM, ANDREW J. RHODES, ALBERT B. SABIN, J. D. VERLINDE, AND HERDIS VON MAGNUS. Picornavirus Group.....	114

NUMBER 2, FEBRUARY 1963

- JULIUS ADLER AND A. D. KAISER. Mapping of the Galactose Genes of *Escherichia coli* by Transduction with Phage P1..... 1
- DAN MEDINA AND LEO SACHS. Studies on the Lytic Interaction and Cell Transformation with a Large- and a Small-Plaque Mutant of Polyoma Virus..... 1
- KIN-ICHIRO MIURA, TOMOKO MIURA, CHUJI HIRUKI, ZYUN HIDAKA, AND ITARU WATANABE. Fractionation of Infectious Ribonucleic Acid Isolated from Tobacco Mosaic Virus..... 1
- ERLING NORRBY. Hemagglutination by Measles Virus. III. Identification of Two Different Hemagglutinins..... 1
- ERNEST WINOCOUR. Purification of Polyoma Virus..... 1
- R. JEENER AND G. VANSANTEN. On the Structural Alterations of Phage Proteins Synthesized in the Presence of Pancreatic Ribonuclease..... 1
- R. E. F. MATTHEWS, E. T. BOLTON, AND H. R. THOMPSON. Kinetics of Labelling of Turnip Yellow Mosaic Virus with P³² and S³⁵..... 1
- R. MACLEOD AND ROY MARKHAM. Experimental Evidence of a Relationship between Turnip Yellow Mosaic Virus and Wild Cucumber Mosaic Virus..... 1
- BERNARD ROIZMAN AND PHILIP R. ROANE, JR. Demonstration of a Surface Difference between Virions of Two Strains of Herpes Simplex Virus..... 1
- ALBERT S. KAPLAN AND TAMAR BEN-PORAT. The Pattern of Viral and Cellular DNA Synthesis in Pseudorabies Virus-infected Cells in the Logarithmic Phase of Growth..... 2
- ROBERT R. WAGNER. Biological Studies of Interferon. II. Temporal Relationships of Virus and Interferon Production by Cells Infected with Eastern Equine Encephalomyelitis and Influenza Viruses..... 2
- LISE THIRY. Chemical Mutagenesis of Newcastle Disease Virus..... 2

DISCUSSION AND PRELIMINARY REPORTS

- TAKESHI TANIGUCHI. Similarity in the Accumulation of Tobacco Mosaic Virus in Systemic and Local Necrotic Infection..... 2
- MASAMI KITAOKA AND CHIAKI NISHIMURA. Noninfectious Hemagglutinin and Complement-Fixing Antigen of Japanese B Encephalitis..... 2
- ETHEL S. TESSMAN AND ROBERT SHLESER. Genetic Recombination between Phages S13 and ϕ X174..... 2

NUMBER 3, MARCH, 1963

- M. L. FENWICK. The Influence of Poliovirus Infection on RNA Synthesis in Mammalian Cells..... 2
- D. H. WATSON, W. C. RUSSELL, AND P. WILDY. Electron Microscopic Particle Counts on Herpes Virus Using the Phosphotungstate Negative Staining Technique..... 2
- NOBUO HASHIMOTO AND ALFRED M. PRINCE. Kinetic Studies on the Neutralization Reaction between Japanese Encephalitis Virus and Antiserum..... 2
- HALLDÓR THORMAR. The Growth Cycle of Visna Virus in Monolayer Cultures of Sheep Cells..... 2
- L. V. CRAWFORD. The Physical Characteristics of Polyoma Virus. II. The Nucleic Acid..... 2
- J. LINDENMANN AND G. E. GIFFORD. Studies on Vaccinia Virus Plaque Formation and Its Inhibition by Interferon. I. Dynamics of Plaque Formation by Vaccinia Virus..... 2
- G. E. GIFFORD, S. T. TOY, AND J. LINDENMANN. Studies on Vaccinia Virus Plaque..... 2

Formation and Its Inhibition by Interferon. II. Dynamics of Plaque Formation by Vaccinia Virus in the Presence of Interferon.....	294
LINDENMANN AND G. E. GIFFORD. Studies on Vaccinia Virus Plaque Formation and Its Inhibition by Interferon. III. A Simplified Plaque Inhibition Assay of Interferon.....	302
S. TEAKLE AND A. H. GOLD. Further Studies of <i>Olpidium</i> as a Vector of Tobacco Necrosis Virus.....	310
H. VENEKAMP AND W. H. M. MOSCH. Chromatographic Studies on Plant Viruses. I. The Isolation of Potato Virus X by Means of Various Systems of Adsorption Chromatography.....	316
BERT W. DARLINGTON AND CHARLES C. RANDALL. The Nucleic Acid Content of Equine Abortion Virus.....	322
WELL A. GLASGOW AND KARL HABEL. Role of Polyoma Virus and Interferon in a Herpes Simplex Virus Infection <i>in Vitro</i>	328
ONEY S. BREESE, JR., AND CARL J. DE BOER. Electron Microscopy of Rinderpest Virus in Bovine Kidney Tissue Culture Cells.....	340
BERBERT A. BLOUGH. The Effect of Vitamin A Alcohol on the Morphology of Myxoviruses. I. The Production and Comparison of Artificially Produced Filamentous Virus.....	349
ATHER DONALD MAYOR, RICHARD M. JAMISON, AND LIANE E. JORDON. Biophysical Studies on the Nature of the Simian Papova Virus Particle (Vacuolating SV 40 Virus).....	359
IRON K. BRAKKE. Stabilization of Brome Mosaic Virus by Magnesium and Calcium.....	367
ICH SIX. Affinity of <i>P2 rd 1</i> for Prophage Sites on the Chromosome of <i>Escherichia coli</i> Strain C.....	375
A. BRUNT AND R. H. KENTEN. The Use of Protein in the Extraction of Cocoa Swollen-Shoot Virus from Cocoa Leaves.....	388
WARNER, M. J. MADDEN, AND J. E. DARNELL. The Interaction of Poliovirus RNA with <i>Escherichia coli</i> Ribosomes.....	393
NEST F. ZIMMERMAN, MARGARET HEETER, AND JAMES E. DARNELL. RNA Synthesis in Poliovirus-Infected Cells.....	400

DISCUSSION AND PRELIMINARY REPORTS

T. FUKADA AND Y. KAWADE. Chromatography of Ribonucleic Acid of High Molecular Weight Isolated from FL Cells Infected with ECHO 7 Virus.....	409
CHIAKI MATSUI, TSUYOSHI SASAKI, AND TOSHIO KIKUMOTO. Electron Microscopy of Tobacco Mosaic Virus Particles from Aphid Stylets.....	411
G. PLUMMER AND A. P. WATERSON. Equine Herpes Viruses.....	412
MILTON PAUL GORDON, JOHN W. HUFF, AND JOHN J. HOLLAND. Heat Inactivation of the Infectious Ribonucleic Acids of Polio and Tobacco Mosaic Viruses..	416
D. H. WATSON, I. A. MACPHERSON, AND M. C. DAVIES. The Structure of the Capsid of GAL Virus.....	418
ratum.....	420

NUMBER 4, APRIL 1963

INZ SCHUSTER AND HEINZ-GÜNTER WITTMANN. The Inactivating and Mutagenic Action of Hydroxylamine on Tobacco Mosaic Virus Ribonucleic Acid.....	421
UYOSHI TAKAHASHI AND TOKUZO HIRAI. A Cytochemical Study of Tobacco Leaf Cells Infected with Tobacco Mosaic Virus.....	431

- A. J. GIBBS, H. L. NIXON, AND R. D. WOODS. Properties of Purified Preparations of Lucerne Mosaic Virus 4
- M. L. ZICHICHI AND G. KELLENBERGER. Two Distinct Functions in the Lysogenization Process: the Repression of Phage Multiplication and the Incorporation of the Prophage in the Bacterial Genome. 4
- P. R. FRY AND R. E. F. MATTHEWS. Timing of Some Early Events Following Inoculation with Tobacco Mosaic Virus. 4
- PAMELA ABEL AND L. V. CRAWFORD. Physical Characteristics of Polyoma Virus. III. Correlation with Biological Activities.
- AIZO MATSUSHIRO. Specialized Transduction of Tryptophan Markers in *Escherichia coli* K12 by Bacteriophage $\phi 80$ 4
- CRAIG WALLIS AND JOSEPH L. MELNICK. Selection of Attenuated Poliovirus from Virulent Suspensions by Heating in Aluminum Chloride.
- MATTHEW D. SCHARFF AND LEON LEVINTOW. Quantitative Study of the Formation of Poliovirus Antigens in Infected HeLa Cells.
- MORAG C. TIMBURY. Antigenic Variation in Amnion Cells after Growth in Tissue Culture in Relation to the Inhibition of Enteroviruses by Anticellular Serum. . . .
- K. B. EASTERBROOK AND C. I. DAVERN. The Effect of 5-Bromodeoxyuridine on the Multiplication of Vaccinia Virus.
- ROBERT M. MCALLISTER, RICHARD M. STRAW, JEAN E. FILBERT, AND CLYDE R. GOODHEART. Human Cytomegalovirus. Cytochemical Observations of Intracellular Lesion Development Correlated with Viral Synthesis and Release.
- CLYDE R. GOODHEART AND LORENE B. JAROSS. Human Cytomegalovirus. Assay by Counting Infected Cells.
- DONALD J. CUMMINGS. Photooxidative Elimination of the Head Form Transition in T2 Bacteriophage.
- NORMAN P. SALZMAN, AARON J. SHATKIN, AND EDWIN D. SEBRING. Viral Protein and DNA Synthesis in Vaccinia Virus-Infected HeLa Cell Cultures.
- AARON J. SHATKIN AND NORMAN P. SALZMAN. Deoxyribonucleic Acid Synthesis in Vaccinia Virus-Infected HeLa Cells.
- D. A. GOVIER. The Reaction of the Dische Diphenylamine Reagent with Sap from Potato Plants Infected with Potato Leaf-Roll Virus.
- KENNETH PAIGEN AND HERBERT WEINFELD. Cooperative Infection by Host-Modified Lambda Phage.
- CHARLES R. GAUSH AND J. S. YOUNGNER. Studies on the Lipids of Virus-Infected Cells. I. Lipid Analysis of a Soluble Hemagglutinin from Chorioallantoic Membranes Infected with Vaccinia Virus.

DISCUSSION AND PRELIMINARY REPORTS

- BERNARD ROIZMAN. Reversible Inhibition of Herpes simplex Multiplication in HEp-2 Cells with Phenethyl Alcohol.
- THOMAS E. FROTHINGHAM. Enhancement of Sindbis Virus Plaque Size in Cell Cultures Treated with Mumps Virus-Infected Egg Fluid.
- WACLAW SZYBALSKI, R. L. ERIKSON, GLENN A. GENTRY, LANELLE G. GAFFORD, AND CHARLES C. RANDALL. Unusual Properties of Fowlpox Virus DNA.
- V. B. SLOTNICK AND E. I. ROSANOFF. Localization of Varicella Virus in Tissue Culture.
- VITTORIO DEFENDI, JOHN LEHMAN, AND PAUL KRAEMER. "Morphologically Normal" Hamster Cells with Malignant Properties.
- Author Index.
- Subject Index.